November 21, 1987

Ms. Caroline Cooper
The EMT Group, Inc.
3615 Wisconsin Avenue, N.W.
Washington, D.C. 20016

RE: Technical Assistance No. 84 - Information System Planning for
Oklahoma Court of Criminal Appeals

Dear Caroline:

On October 29 and 30, 1987, I rendered technical assistance (TA 84) in the area of systems design for a criminal appellate case tracking system for the Oklahoma Court of Criminal Appeals. During the course of the on-site assistance, the following employees of the court were contacted for problem overview statements, perspectives and viewpoints on the project efforts to date.

Honorable Thomas Brett, Presiding Justice
Ms. Dorothy Woods, Financial Officer and Project Director
Mr. Wayne Kerley, Consultant

Additionally, the Clerk of the Supreme Court, Mr. Jim Patterson, and the Chief Clerk of the Court of Criminal Appeals, Ms. Marylee Jones, provided an overview of the workflow within these two clerical functions for my benefit.

While the request for assistance from the Court of Criminal Appeals has the objective of providing guidance in the design of a case tracking system, it became obvious that the efforts in the design of the system were in competent "hands." The Court and its consultant have taken a pragmatic, and in my opinion, a correct approach to the design by using the Appellate Case Tracking System (ACTS) of the Supreme Court for prototyping. The ACTS has been in use for some time and has "matured." The approach has insured that the design efforts are starting from a mature position. Consequently, I feel that my efforts in this court would be better served by obtaining an overview of the development and user environment and provide some suggestions to assist the Court in identifying future development issues.

The narrative that follows presents an overview of the scope and objectives of the project, the computer hardware and software environment within the Court, the progress within the project, to date, some pertinent observations and comments, and finally suggestions and recommendations concerning the project.

PROJECT SCOPE AND OBJECTIVES

On December 30, 1985, a justice assistance subgrant application was submitted by the Oklahoma Court of Criminal Appeals, in the amount of $99,318.50. This grant application was matched, in kind, with 100% appropriated monies from the State. The application was subsequently approved and monies totalling $198,637 was awarded for the project efforts.

Basically, the scope of the project efforts are two-pronged: One is the procurement of computer hardware and a "programmerless" application development environment. The second is the development of an appellate criminal case tracking system to monitor each criminal appeal filed and/or pending, as well as to provide statistical information for analysis and research about the pending and disposed caseload, internally, as well as for other criminal justice agencies and the legislature.

HARDWARE AND SOFTWARE ENVIRONMENT

The Court of Criminal Appeals purchased the following hardware configuration as part of the grant project:
UNISYS (Sperry) System 11:

Central Processing Unit with 4 Megabytes (MB) of Memory
Two (2) Model 8436 Disk Drives (fixed) each w/230MB of storage capacity
One (1) Model K3782 Streaming Tape Drive, 1600 bpi
One (1) Model SVT 1120 Cathode Ray Tube (CRT)
Six (6) Model 500 HT Personal Computers (MS DOS) each configured with:
- 640K of memory (8086 processor)
- One (1) 360K Floppy Disk Drive
- One (1) 20 MB Hard Disk Drive
- Three (3) Model 31 Qume letter quality printers, 50 cps
- One (1) Epson RX 80 dot matrix printer, 100 cps
- One (1) Unisys Model 425 console printer, 180 cps
- One (1) Unisys Model 798 line printer, 180 lpm
- Two (2) 16-line multiplexers

The Operating System consists of the UNISYS OS 1100, with a transaction processing function dubbed TIP and a communications manager dubbed CMS. Three (3) compilers are also included in the operating system package: COBOL; FORTRAN; and BASIC.

For application development, the Court purchased a 4th generation nonprocedural language and relational database package called MAPPER, a product of UNISYS. Version 31 is presently in use, but the court has ordered and is awaiting Version 32 of the software.

The Court also procured an office automation package dubbed SPERRYLINK containing word processing, print spooling, and electronic mail functions.

PROJECT PROGRESS TO DATE

The project for the Court, officially commenced in March, 1986, when the Court took delivery of its hardware. One Court employee was sent to Dallas to receive training in MAPPER in the subsequent month. However, little progress was made in the design of a system, when contractual issues between the Court, the State and the hardware vendor arose. These issues were finally resolved in the Spring of 1987, with the Court deciding that the incumbent delays in the development of the system could only be made-up by the hiring of a knowledgeable MAPPER consultant. Following the bid process, the Court awarded a one (1) year contract for system design, development, testing, training, implementation, enhancement and documentation to Mr. Wayne Kerley. Mr. Kerley's contractual obligations commenced on August 11, 1987.

Over the next six (6) weeks, Mr. Kerley conducted training classes for the court personnel. Approximately two (2) days were spent in presentations on the operational aspects of the system with particular emphasis on learning the necessary procedures for backing-up the daily data base transactions to tape, and restoring the data base. The next topic covered was an introduction to MAPPER's functions (searches, sorts, calculations, etc.) over a two-week period of half day sessions. The final session explored the principles of system design using MAPPER in another two-weeks of half day sessions.

Following these introduction and overview classes, Mr. Kerley delved into the prototyping of a case tracking system. By utilizing the design of the Oklahoma Supreme Court's ACTS, developed by the staff of the State Court Administrator's Office, he was able to layout a preliminary data base, files and record formats, inclusive of data capture and edit screens, inquiry screens, and reports in a period of just three (3) weeks. From this endeavor, he has worked closely with the justices and court staff to refine portions of preliminary design into a final version.
As of the date of the on-site visit, I would estimate that 40% of the case tracking system has reached the final design stage. Presently, approximately seven (7) data capture screens (out of 11 screens preliminarily designed) are operational, as well as several of the 12 inquiry screens.

**OBSERVATIONS AND COMMENTS**

From impressions received during discussions with Court personnel, it is obvious that there is an air of excitement and anticipation within the Court environment. Mr. Kerley appears to be well respected and personnel, inclusive of the judges and their clerical staff, can see tangible progress being made. Mr. Kerley appears to have been very responsive to the "user" by insuring that suggestions made by the user about prototyped screens and reports are incorporated.

As an example, many of the inquiry screens prototyped from the ACTS contained numerous codes. After reviewing these prototyped screens with the judges and their law clerks, many of the arcane codes were eliminated and replaced with full verbage and phrases of more meaning and value.

This user responsiveness on the part of the Court's consultant, coupled with the approach of prototyping a proven case tracking system utilized by the Supreme Court, has been instrumental in raising the morale of the Court personnel. It has also been demonstrative to the Court that the computer hardware and software purchase, under much controversy and "attack" by the more traditional computer community within the State, can indeed accommodate the needs of the Court in the area of case tracking and management.

While suffering the beration of much of the state's data processing personnel, the hardware and software environment purchased by the court appears to be very adequate for the computer applications envisioned. These applications include: appellate case tracking and monitoring; caseload statistics; notice generation; opinion generation, archiving and research (keyword search); administrative systems, such as, personnel, payroll, budget, finance, inventory and fixed assets. While the use of the 4th generation application development environment of MAPPER is quite memory (RAM) intensive, given the relatively small daily transactions estimated, and the relative inexpensiveness of additional memory, it appears that this configuration, with the planned addition of more memory and tape drive capacity, should serve the court well in the coming years. Should the court require more capacity and/or speed, the UNISYS line appears to provide for hardware system upgrades, without the necessity for any operating system changes or application software conversions.

**SUGGESTIONS AND RECOMMENDATIONS**

The present system design, development and data conversion efforts of the Court are proceeding with some haste in an effort to have a demonstrative system together for the upcoming legislative session. Given the capabilities of MAPPER, this is not an unrealistic goal. As mentioned previously, the data base, file and records have been defined and a number of data entry and inquiry screens have been developed from prototypes. This effort has enabled the Court to proceed with the capture of data on current and pending cases and testing of the entry and inquiry routines. Given the long delays resulting from contractual issues over the hardware, it is deemed important that the legislature witness some very real progress in these project efforts made possible by appropriated state matching funds. I concur with this assessment of the situation, the approach taken by the consultant, and the efforts that are underway.

It is obvious that while there is a feeling of urgency to completing the system to a point that the legislature can appreciate a show of real progress, the activities associated with the design, development, testing, training, data conversion and implementation were
observed to be well conceived, yet, not formalized in writing. With respects to this documentation process, it is suggested that:

1. Because data base test and work files are being created with actual data from the current filings and pending criminal appeal cases, it is important that consistent terms and phrases be defined for input. Consequently, some time should be allocated immediately to defining and establishing a table of standard terms for input and documenting sources of data and procedures for data capture and entry. This effort should be considered as "on-going" -- the tables and procedures should be changed and modified as necessary when different situations are encountered in the data capture effort in the upcoming weeks.

2. The documentation of the systems development effort is planned to take place during and following the legislative session. The following documentation is suggested for the benefit of the Court of Criminal Appeals:

   - Complete description of the system's features and functions to include:
     
     Copy of data base definition, file and record layouts, system tables;
     Current renditions of all system screen maps;
     Current renditions of all system output reports;
     Description of processing logic for system functions and calculations;
     Complete listings of MAPPER screen generation, report and processing programs by system function.

   - Users Manual describing source data capture, entry, editing (change, delete), and reporting procedures (on-line and batch) developed for the system.

   - System Administrator's Manual describing the system's security features, levels of function accessibility and importance of limiting accessibility to system functions, and assignment procedures for system user accessibility and identification numbers.

   - System Operations Manual describing system power-up, power-down, purge, back-up, and restore procedures.

While the basic hardware configuration appears to be adequate for the immediate and future needs of the Court, Mr. Kerley and I agree that to insure adequate system response and disk access times as applications are developed under MAPPER, the Court should plan for budget requests seeking the following hardware upgrades and components:

   - Priority 1: a high speed tape drive system in lieu of the slow streaming tape drive presently contained in the configuration;
   - Priority 2: a second disk controller to provide dual access to the data base files and records stored on the hard disks;
   - Priority 3: a memory upgrade of a least two (2) megabytes, with 4 megabytes preferable;
   - Priority 4: at least two (2) additional communication ports.

These upgrades and enhancements will serve to provide the Court with the needed capacity to handle future applications and the additional work load to be required of the system when two (2) more justices and their incumbent support staff join the Court of Criminal Appeals in January 1989.

Since one of the objectives of the Appellate Case Tracking System for the Court of Criminal Appeals is to provide data on pending and disposed cases to other criminal
Justice agencies within the state, it would be beneficial if the Court was supplied copies of pertinent standards, if any, developed through the SEARCH Group, pertaining to appellate criminal offender based statistical needs of the state and federal criminal justice community.

During a walk-through of the data entry function of the system, it was observed that a data entry screen designed to record appellee and appellant filings within a case was being considered for the recording of court issued orders, as well. While the screen accommodates case filing data adequately, it is awkward for recording court orders. It is suggested that a separate data capture and entry screen be developed for court issued orders in appellate cases.

As concerns further technical assistance to the Court of Criminal Appeals, it appears appropriate that such assistance could be offered in three (3) areas. First, approximately three (3) days of on-site assistance could be provided after the first of the new year to review the system development efforts prior to the legislative session. This effort would concentrate on reviewing all of the functions of the final version of the system. With MAPPER, should enhancements and/or changes be seen and suggested, these can be made without major difficulty and probably before the commencement of the legislative session.

Another three (3) or four (4) days could be provided to the Court to review the systems documentation for completeness. The time frame for this effort would most likely be appropriate in April or May 1988.

Depending on the priority placed on opinion generation, archiving and research, two (2) days of on-site technical assistance would be appropriate to attempt to isolate what software "fix" is necessary to enable the SONY word processors used by the justice's secretaries to retrieve its documents intact with all formatting codes from the hard disks of the Sperry. While the Court has been successful in communicating with and storing SONY equipment generated documents on the hard disks of the Sperry, it has been unable to retrieve the data through the SONY, intact.

In summary, I feel the Oklahoma Court of Criminal Appeals is on the road to recovery from the delays in the early days of the project. The Court's consultant clearly has the necessary system development and user environment skills to fulfill the objectives of the project. The Court and its personnel are displaying the type of attitude and enthusiasm necessary to see it through some of the inevitable rough spots that lay ahead. If care is exercised in future planning for additional and identified applications, and the Court develops an appreciation of the importance of good system and planning documentation, I feel that they will be very successful in their present and future endeavors.

I enjoyed my time with the Court and hope that my schedule will permit me an opportunity to revisit the Court in the upcoming months for follow-up assistance.

Sincerely,

GARY GOFF
Consultant